AC UPS

Svyaz engineering

SIPB series
400-2000 VA

LCD or LED panel for option

LED display LCD display

Features

- AVR Boost and Buck
- Cold Start Function
- Smart RS232/USB Interface for Power Management
- Built-in Self-diagnostic Function
- Modem/LAN Internet Protection
- Compatible with Generator Set (for option)
- LCD or LED panel for option
- Fastest Charging Capacity
- Auto Charging at Off Mode
- Auto-restart Function

1. AC input
2. Output receptacles
3. USB & RJ11 communication
4. USB & RS232 communication
5. RJ45

Rear Panel

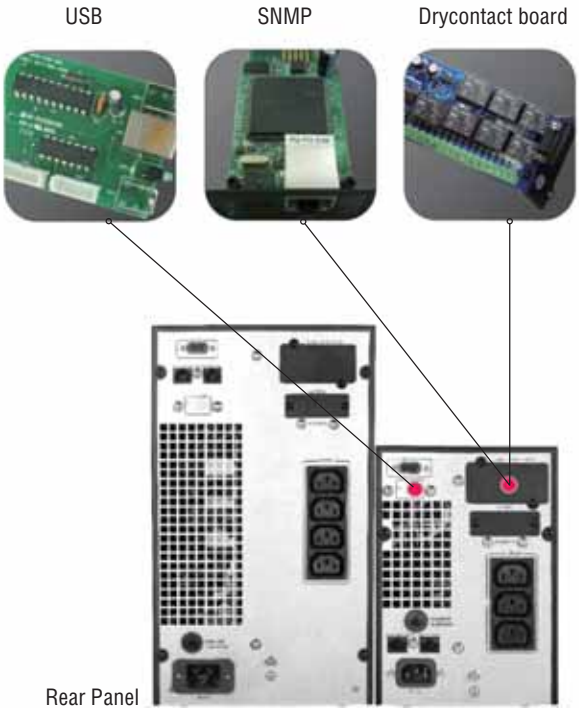
Характеристики

MODEL	SIPB.4BA LI	SIPB.6BA LI	SIPB.8BA LI	SIPB1BA LI	SIPB1.2BA LI	SIPB1.5BA LI	SIPB2BA LI
CAPACITY	400VA / 240 W	600VA / 360 W	800VA / 480 W	1000VA / 600 W	1200VA / 720 W	1500VA / 900 W	2000VA / 1200 W
INPUT							
Voltage	110/120 VAC or 220/230/240 VAC						
Voltage Range	81 ~ 145 VAC / 162 ~ 290 VAC						
Frequency Range	60/50 Hz (auto sensing)						
OUTPUT							
AC Voltage Regulation (Batt. Mode)	±10%						
Frequency Range (Batt. Mode)	60 Hz or 50 Hz ±1 Hz						
Transfer Time	Typical 2 ~ 6 ms, 10ms max.						
Waveform (Batt. Mode)	Simulated Sine Wave						
BATTERY							
Battery Type & Number	12V/4.5AH x 1	12V/7AH x 1	12V/9AH x 1	12V/7AH x 2	12V/7AH x 2	12V/9AH x 2	12V/9AH x 2
Typical Recharge Time	6 ~ 8 hours recover to 90% capacity						
INDICATORS							
AC Mode	Green LED lighting					The 5st Green Led Lighting. (The 1st to 4th green Led lighting to indicate load level) LED1 (green): >100% load level. LED2 (green): >75% load level. LED3 (green): >50% load level. LED4 (green): >25% load level	
Battery Mode	Amber LED flashing					The 5st green blinking. (The 1st to 4th green Led lighting to indicate battery capacity) LED1 (green): battery voltage > 25V LED2 (green): battery voltage > 23V LED3 (green): battery voltage > 22V LED4 (green): battery voltage > 21V	
Fault	Red LED lighting						
PROTECTION							
Full Protection	Overload and overcharge protection						
ALARM							
Battery Mode	Sounding every 10 seconds						
Low Battery	Sounding every second						
Overload	Sounding every 0.5 second						
Battery Replacement Alarm	Sounding every 2 seconds						
Fault	Continuously sounding						
PHYSICAL							
Dimension D X W X H (mm)	298x101x142			338x149.3x162		380x158x198	
Net Weight (kg)	3.55						
OPERATING ENVIRONMENT							
Humidity	0 ~ 90 % RH at 0 ~ 40°C (non-condensing)						
Noise Level	Less than 40dB						
MANAGEMENT							
Optional USB/RS-232 Port	Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7, Linux, Unix, and MAC						
Industry standart	CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R						

SIPB series
1-3 kVA
1:1 Phase

Features

- Online-Double conversion (PFC)
- Full digital control (DSP)
- Output power factor: 0.7
- Economic Operation mode (ECO)
- Wide input-voltage range
- Self-testing when UPS startup
- Cold Start (DC)
- Multifunctional protection
- Output bypass settable
- Input neutral and live wires reverse detection
- Optimized Battery configuration:
- 1K-24V, 2K-48V, 3K-72V
- Charger extendible
- USB port (optional), USB is of automatic priority when USB & RS232 work together.
- Intelligent slot (optional): USB /SNMP /Dry contact Board



Rear Panel

The series has matching Battery Cabinets. (Optional)

Optimized battery configuration 1k-24V,2K-48V,3K-72V

Model			SIPB1BA	SIPB1BD	SIPB2BA	SIPB2BD	SIPB3BA	SIPB3BD
Capacity (VA)			1000VA/700W		2000VA/1400W		3000VA/2100W	
Input	Phase		Single phase & Ground					
	Rated Voltage		220VAC					
	Voltage Range		115VAC~295VAC					
	Frequency Range		45~55Hz±0.5Hz or 55~65Hz±0.5Hz auto sensing					
	Power factor		≥0.98					
	Bypass voltage		186VAC~252VAC					
	Current Harmonic		≤7% (100% non-linear load)					
Output	Phase		Single phase & Ground					
	Rated Voltage		200/208/220/230/240VAC (optional)					
	Power Factor		0.7					
	Voltage Precision		±2%					
	Output Frequency	Utility Mode	Follow utility					
		Battery Mode	50/60±0.2%)Hz					
	Crest Factor		3:1					
	Transfer Time		(Utility←→Battery) = = 0ms					
			(Utility←→Bypass) <4ms					
	Overload Capacity	Battery Mode	108%±5%<Load≤150%±5% exceed 30s, cut off and alarm,					
			150%±5%<Load<200%±5% exceed 300ms, cut off and alarm					
		Utility Mode	108%±5%<Load≤150%±5% exceed 30s, transfer to bypass and alarm,					
			150%±5%<Load<200%±5% exceed 300ms, transfer to bypass and alarm					
	Efficiency	Utility mode	86%					
		Battery mode	84%					
	THD		≤3% (100% linear load)					
			≤5% (100% non-linear load)					
Battery	Voltage		24VDC	24VDC	48VDC	48VDC	72VDC	72VDC
	Battery configuration		2X12V/7AH		4X12V/7AH		6X12V/7AH	
	Type		12V/7AH (Standard)					
	Backup Time		50% load≥5min (Standard), Long time unit depends on the capacity of external batteries.					
	Charge Current (A)		1A	4A	1A	4A	1A	4A
Comunication Interface			RS232 .Optional (USB port, USB card, SNMP card, Dry contact card)					
Operation	Temperature		0...40°C					
Environment	Humidity		0...95% (non condensing)					
	Storage Temperature		-25°C...55°C					
	Altitude		<1500m					
Other	Unit Dimensions WxDxH (mm)		144×361×215		191×428×337			
	Weight (Kg)		10.2/11	5.2/6	19.5/21.1	9.5/11.1	24/25.6	9.7/11.3
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R					

SIPB series
6-10 kVA
1:1 Phase

Control Panel
Upto 50 items set by LCD

Rear Panel

Centralized monitoring card

Relay card

SNMP

Parallel module

Comunication port
RS232 port,dry contact,
RS485 2

Layout Dismountable
MBM module

Features

- Online Double conversion
- Non transfer time of output
- PFC technology
- Full digital control (DSP)
- Output power factor: 0.8
- Input current harmonic: 5%
- Charging /Rectifier/Inverter fully digital control technology
- Economic Operation Mode (ECO)
- Optimization battery group: 16/18/20 pieces (optional)
- Wide voltage range: 120VAC-276VAC
- Wide input frequency range: 40Hz-70Hz
- Self-testing when UPS startup
- Input over/under-voltage protection
- Automatic Bypass
- Cold start (DC)
- Fault isolation
- Comunication port: RS232 port, dry contact, RS485*2
- Optional: SNMP card/Centralized monitoring card/ Parallel port module

The series has matching
BatteryCabinets (Optional)

Optimization battery group
16/18/20 pieces (optional)

Model			SIPB6BD	SIPB10BD
Capacity			6000VA/4800W	10000VA/8000W
Output	Phase		Single phase &Ground	
	Rated Voltage		220/230VAC	
	Voltage Range		120VAC ~ 276VAC	
	Frequency Range		40Hz ~ 70Hz	
	Power Factor		≥0.99	
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%)	
			Min. voltage: -45% (optional -20%, -30%)	
			Frequency protection range: ±10%	
	ECO Range		same as the bypass	
	Harmonic Current		≤5% (100%non-linear load)	
Output	Phase		Single phase & Ground	
	Rated Voltage		220/230VAC	
	Power Factor		0.8	
	Voltage Precision		±2%	
	Output Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)	
		Battery Mode	(50±0.2)Hz	
	Crest Factor		3:1	
	Transfer Time		Utility to Battery: 0ms	
			Utility to bypass: 0ms (following)	
	Overload Capacity		Load≤110%, 60min, ≤125%, last 10min, ≤150%last 1min, ≥150%shut down UPS immediately	
	THD		≤2%	
Efficiency			ECO mode≥98%; Normal mode≥90%	
Battery	Voltage		±96V\±108V\±120V DC; battery quantity (optional)	
	Backup Time		Full load≥2min (Standard), Long time unit depends on the capacity of external batteries.	
	Charge Current		1A (Standard); Maximum 6A	
Comunication Interface			RS232, Optical coupler dry contact, RS485,SNMPcard (optional), Parallel card (optional),Centralized monitoring card	
Operating Environment	Temperature		0°C 40°C	
	Humidity		0 ~ 95% non condensing	
	Storage Temperature		-25°C...55°C	
	Altitude		< 1500m	
Other	Unit Dimensions WxDxH (mm)		250x590x655	250x590x655
	Weight (Kg)		70kg (Standard)/30 (Long time unit)	80kg (Standard)/40 (Long time unit)
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R	

SIPB series
10-20 kVA
3:1 Phase

Control Panel
Upto 50 items set by LCD

Rear Panel

Centralized monitoring card

Relay card

SNMP

Parallel module

Comunication port
RS232 port, dry contact,
RS485×2

Layout
Dismountable MBM module

Features

- Online-Double conversion
- Non Transfer Time of output
- PFC technology
- Full digital control (DSP)
- Output power factor: 0.8
- Input current harmonic: 5%
- ECO function
- Charging/Rectifier/Inverter fully digital control technology
- Optimization battery group, the quantity of battery: 16/18/20 pieces (optional)
- Wide input voltage range: 304~478VAC
- Wide input frequency range: 40~70Hz±0.5Hz
- Self-testing when UPS startup
- Input over/under-voltage protection
- Automatic bypass
- DC start
- Fault isolation
- Comunication port: RS232 , dry contact, RS485×2
- Options: SNMP card/Centralized monitoring card/ Parallel port module

The series has matching
Battery Cabinets (Optional)

Optimization battery group
16/18/20 pieces (optional)

Model			SIPB10BD	SIPB15BD	SIPB20BD
Capacity (VA)			10KVA/8KW	15KVA/12KW	20KVA/16KW
Input	Phase		3 phase 4 wires and Ground		
	Rated Voltage		380/400VAC		
	Voltage Range		304~478VAC		
	Frequency Range		40~70Hz		
	Power Factor		≥0.99		
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%)		
			Min. voltage: -45% (optional -20%, -30%)		
			Frequency protection range: ±10%		
	ECO Range		Same as bypass		
	Current Harmonic		≤5% (100% non-linear load)		
Output	Phase		Single phase & Ground		
	Rated Voltage		220/230VAC		
	Power Factor		0.8		
	Voltage Precision		±2%		
	Output Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)		
		Battery Mode	(50±0.2)Hz		
	Crest Factor		3:1		
	Transfer Time		Utility to Battery : 0ms		
			Utility to bypass : 0ms (following)		
	Overload Capacity		Load≤110%, 60min, ≤125%, last 10min, ≤150%last 1min, ≥150% shut down UPS immediately.		
	THD		≤2%		
Efficiency			ECO mode≥98%; Normal mode≥90%		
Battery	Voltage		±96V\±108V\±120V DC; battery quantity (optional)		
	Backup time		Full load≥2min (10KVA Standard unit), Long time unit depends on the capacity of external batteries.		
	Charge Current (A)		1A (10KVA Standard unit) ; Long time unit Maximum current 6A		
Comunication Interface			RS232, dry contact, Centralized monitoring card Optional (RS485,SNMP, Parallel card)		
Operating Environment	Temperature		0°C 40°C		
	Humidity		0 ~ 95% non condensing		
	Storage temperature		-25°C...55°C		
	Altitude		< 1500m		
Other	Unit Dimensions W×D×H mm)		250×590×655	250×590×655	250×590×655
	Weight (Kg)		80kg (Standard unit)/ 40 (Long time unit)	45	45
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R		

SIP series
1-3 kVA
1:1 Phase
(PF0.9)

1. EPO port
2. Intelligent slot for SNMP card,drycontact cart etc.
3. External battery cabinet connector
4. Output slots inluding two segments
5. Large current output slot
6. Input slot
7. RJ45 surge suppress port
8. RS232 port
9. USB port

Rear Panel

Features

- High power density. Output power factor up to 0.9.
- Three segment charging mode to increase battery service life, optimize recharge time.
- Selectable High Efficiency mode of operation.
- Cold start function to startup the UPS without utility.
- Standard communication options: one RS-232 communication port, one USB communication port, and relay output contacts or SNMP card.
- Power Shedding function may turn off uncritical load in battery backup to make longer backup time for critical load.
- Extended runtime with up to four Extended
- Battery Packs per UPS.
- Emergency shutdown control through the Remote Emergency Power-off (EPO) port.
- Versatile LCD display with setting function.

The series has matching Battery Cabinets (Optional)

MODEL			SIP1BA	SIP2BA	SIP3BA
CAPACITY	VA/W		1000VA/900W	2000VA/1800W	3000VA/2700W
INPUT	Voltage Range		200-290VAC at full load		
	Frequency Range		45-55Hz at 50Hz/55-65Hz at 60Hz (auto-detect)		
	Phase		Single phase with ground		
	Current THDI		<7% (100% nonlinear load)	<7% (100% nonlinear load)	<7% (100% nonlinear load)
	Power Factor		≥0.98		
	Generator Input		Support		
	breaker		7A	16A	25A
	Input Socket		IEC320 C13-10A	IEC320 C20-16A	IEC320 C20-16A
	AC power cord		IEC320 C14-10A	IEC320 C19-16A	IEC320 C19-16A
OUTPUT	Voltage		200/208/220/230/240VAC		
	Power Factor		0.9		
	Voltage Regulation		±2%		
	Frequency (Line Mode)		46-54Hz at 50Hz/56-64Hz at 60Hz		
	Frequency (Battery Mode)		50/60Hz±0.02Hz		
	Current Crest Ratio		3:1		
	Harmonic Distortion		≤3% THD (Linear Load)		
			≤5% THD (Non-Linear Load)		
	Output Waveform		Pure Sinewave		
	Outlet		(IEC C13-10A)×3	(IEC C13-10A)×8	(IEC C13-10A)×8 (IEC C19-16A)×1
	Overload Capacity	Line Mode	30S at 100%-150% ;300ms at >150%		
		Battery Mode	30S at 100%-150% ;300ms at >150%		
EFFICIENCY	AC Mode		Full load≥89%	Full load≥89%	Full load≥89%
	Battery Mode		Full load≥84%		
	ECO Mode		Full load≥94%		
BATTERY	Number of Batteries Per Set		3	6	6
	Battery Type		12V/7Ah/9Ah	12V/7Ah/9Ah	12V/9Ah
	Backup Time		Estimated remaining time displayed on the LCD		
	Recharge Time (to 90%)		5 Hours	5 Hours	5 Hours
	Charging Current (Max)		1.0A	1.0A	1.0A
	Rated Battery Voltage		36Vdc	72Vdc	72Vdc
	Charge mode		3-stage charging		
	Protect		Over-voltage /Over-current /Low-voltage		
	Battery Socket		Anderson like PowerPole Modular Connectors		
TRANSFER TIME	Mains ←→ Battery Mains ←→ Bypass		0ms <4ms		
OPTIONAL FEATURES	Economic Mode (ECO Mode)		Support		
INDICATOR	LCD Version (with LED)		Load/Battery/Input/Output/Operating Mode Information		
AUDIBLE	Battery Mode		Sounding every 4 seconds		
ALARM	Low Battery		Sounding every second		
	Overload		Sounding twice every second		
	Fault		Continuously Sounding		
PHYSICAL	Dimension (W×D×H)mm		144×409×215	199×466×337	
	Net Weight (kg)		13	24.6	25.5
ENVIRONMENT	Safety		CB		
	Operating Environment		0…40°C		
	Relative Humidity		0-90% (non-condensing)		
	Altitude		<1500m. when >1500m, derating		
	Noise Level		<55dB at 1Meter		
INTERFACE	Smart RS-232/USB (Preferential)		Software supports Windows Family,Linus,FreeBSD		
	Intelligent Slot		SNMP (independent to RS232)		
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R		

* If rated input voltage select to be 200V, the low limit is 180V. If rated input voltage select to be 208V, the low limit is 190V. Under other condition the low limit is 200V.

SIP series 6-10 kVA 1:1 Phase (PF0.9)

1. Terminal block
2. Breaker

Rear Panel

Features

- N+X Parallel Redundancy
- Online Double Conversion with DSP Control
- Graphic LCD Display with Multifunction Param eter Settings
- Unity Input Power Factor with Low Input Current Distortion
- High Output Power Factor at 0.9PF
- Low Input Current Distortion
- Support Generator Input
- Support Economic (ECO) Operation Mode
- Settable Battery Voltage
- Movable Bypass Module
- Matching Battery Pack with Powerful Charger Built-in
- Versatile Communication Interfaces Available
- Cold Start
- Communication Software
- Optional Centralized monitor function
- Settable Charge Current

The series has matching Battery Cabinets (Optional)

Model			SIP6BA	SIP10BA
Capacity (VA/W)			6KVA/5.4KW	10KVA/9KW
Input	Phase		Single phase &Ground	
	Rated Voltage		220/230/240VAC	
	Voltage Range		120VAC ~ 276VAC	
	Frequency Range		40Hz ~ 70Hz	
	Power Factor		≥0.99	
	Current THDi		≤5% (100% nonlinear load)	
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%) Min. voltage: -45% (optional -20%, -30%) Frequency protection range: ±10%	
	ECO Range		same as the bypass	
	Generator Input		Support	
Output	Phase		Single phase & Ground	
	Rated Voltage		220/230/240VAC	
	Power Factor		0.9	
	Voltage Regulation		±2%	
	Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)	
		Battery Mode	50±0.2)Hz	
	Crest Factor		3:1	
	THD		≤2% with linear load ≤5% with non linear load	
	Waveform		Pure Sinewave	
Efficiency			ECO mode≥97%; Normal mode≥90%	
Battery	Voltage		Standard: 192Vdc; Optional Voltage: 216/240Vdc	
	Capacity (standard unit)		12V/7AH	12V/9AH
	Backup Time		Full load≥2min (Standard), Long time unit depends on the capacity of external batteries Estimated remaining time displayed on the LCD	
	Recharge time to 90%		8~10 hours (Standard)	
	Charging Current		1A (Standard unit) ; Long time unit Maximum current 6A (charge current can be set according to battery capacity installed)	
	Battery Socket		Hardwire	
Transfer Time			Utility to Battery : 0ms; Utility to bypass: 0ms	
Protection	Overload	AC Mode	Load≤110%: last 3min, ≤125%: last 30S, ≤150%: last 1S, ≥150% shut down UPS immediately	
		Bat. Mode	Load≤110%: last 30S, ≤125%: last 1S, ≤150%: last 200ms, ≥150% shut down UPS immediately	
		Bypass Mode	40A (Input Breaker)	60A (Input Breaker)
	Short Circuit		Hold Whole System	
	Overheat		Line Mode: Switch to Bypass; Backup Mode: Shut down UPS immediately	
	Battery Low		Alarm and Switch off	
	Self-diagnostics		Upon Power On and Software Control	
	EPO (optional)		Shut down UPS immediately	
	Battery		Advanced Battery Management	
	Noise Suppression		Complies with EN62040-2	
Alarms	Audible & Visual		Line Failure, Battery Low, Overload, System Fault	
Display	Status LED & LCD		Line Mode, Backup Mode, Eco Mode, Bypass Mode, Battery Low, Battery Bad, Overload & UPS Fault	
	Reading On the LCD		Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load Percentage, Battery Voltage, Inner Temperature & Remaining Battery Backup Time	
Physical	Dimension (WxHxD)mm		250x655x590	
	Weight (Kg)		70	85
	Input Connection		Hardwire	
	Output Connection		Hardwire	
	External Battery Connection		Hardwire	
Comunication Interface			USB, RS485, SNMPcard (optional), Parallel card (optional),Centralized monitoring card	
Environment	Operating Temperature		0...40°C	
	Storage Temperature		-25...55°C	
	Humidity		0 ~ 95% non condensing	
	Altitude		< 1500m	
Safety Conformance			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R	

SIP series 10-20 kVA 3:1 Phase (PF0.9)

1.Terminal block
2.Breaker

Rear Panel

Features

- N+X Parallel Redundancy
- Online Double Conversion with DSP Control
- Graphic LCD Display with Multifunction Parameter Settings
- Unity Input Power Factor with Low Input Current Distortion
- High Output Power Factor at 0.9PF
- Low Input Current Distortion
- Support Generator Input
- Support Economic (ECO) Operation Mode
- Settable Battery Voltage
- Movable Bypass Module
- Matching Battery Pack with Powerful Charger Built-in
- Versatile Communication Interfaces Available
- Cold Start
- Communication Software
- Optional Centralized monitor function
- Settable Charge Current

The series has matching Battery Cabinets (Optional)

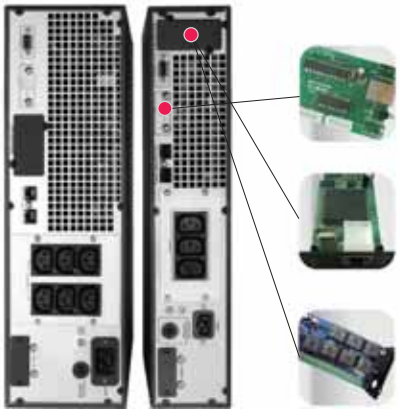
Model			MP10K	MP15K	MP20K
Capacity (VA/W)			10KVA/9KW	15KVA/13.5KW	20KVA/18KW
Input	Phase		3 phase 4 wires and Ground		
	Rated Voltage		380/400/415VAC		
	Voltage Range		304~478VAC		
	Frequency Range		40Hz-70Hz		
	Power Factor		≥0.99		
	Current THDi		≤5% (100% nonlinear load)		
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%) Min. voltage: -45% (optional -20%, -30%)		
			Frequency protection range: ±10%		
	ECO Range		same as the bypass		
	Generator Input		Support		
Output	Phase		Single phase & Ground		
	Rated Voltage		220/230/240VAC		
	Power Factor		0.9		
	Voltage Regulation		±2%		
	Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)		
		Battery Mode	(50±0.2)Hz		
	Crest Factor		3:1		
	THD		≤2% with linear load ≤5% with non linear load		
	Waveform		Pure Sinewave		
Efficiency			ECO mode≥97%; Normal mode≥90%		
Battery	Voltage		10KVA Standard unit: 192Vdc; 192/216/240Vdc;battery quantity (optional)		
	Capacity (standard unit)		MP9310S: 9AH; MP9310H: N/A	N/A	
	Backup Time		Full load≥2min (Standard), Long time unit depends on the capacity of external batteries Estimated remaining time displayed on the LCD		
	Recharge time to 90%		8~10 hours (10KVA Standard unit)		
	Charging Current		1A (10KVA Standard unit) ; Long time unit Maximum current 6A (charge current can be set according to battery capacity installed)		
	Battery Socket		Hardwire		
Transfer Time			Utility to Battery : 0ms; Utility to bypass: 0ms		
Protection	Overload	AC Mode	Load≤110%: last 3min, ≤125%: last 30S, ≤150%: last 1S, ≥150% shut down UPS immediately		
		Bat. Mode	Load≤110%: last 30S, ≤125%: last 1S, ≤150%: last 200ms, ≥150% shut down UPS immediately		
		Bypass Mode	60A (Input Breaker)	100A (Input Breaker)	125A (Input Breaker)
	Short Circuit		Hold Whole System		
	Overheat		Line Mode: Switch to Bypass; Backup Mode: Shut down UPS immediately		
	Battery Low		Alarm and Switch off		
	Self-diagnostics		Upon Power On and Software Control		
	EPO (optional)		Shut down UPS immediately		
	Battery		Advanced Battery Management		
	Noise Suppression		Complies with EN62040-2		
Alarms	Audible & Visual		Line Failure, Battery Low, Overload, System Fault		
Display	Status LED & LCD		Line Mode, Backup Mode, Eco Mode, Bypass Mode, Battery Low, Battery Bad, Overload & UPS Fault		
	Reading On the LCD		Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load Percentage, Battery Voltage, Inner Temperature & Remaining Battery Backup Time		
Physical	Dimension (WxHxD)mm		250x655x590		
	Weight (Kg)		85kg (Standard unit)/40kgs (Long time unit)	45	45
	Input Connection		Hardwire		
	Output Connection		Hardwire		
	External Battery Connection		Hardwire		
Comunication Interface			USB, RS485, SNMPcard (optional), Parallel card (optional),Centralized monitoring card		
Environment	Operating Temperature		0...40°C		
	Storage Temperature		-25...55°C		
	Humidity		0 ~ 95% non condensing		
	Altitude		< 1500m		
Safety Conformance			CE,EN/IEC 62040-2,EN/IEC 62040-1-1, GOST R		

SIPB series
1-3 kVA

Two directions
LCD display

Rack-Towerconvertible

Multifunctional bracket



Features

- Rack-Tower convertible
- Two directions LCD display
- Online-Double conversion (PFC)
- Full digital control (DSP)
- Output power factor: 0.8
- Economic Operation Mode (ECO)
- Wide input voltage range
- Self-testing when UPS startup
- Cold Start (DC)
- Multifunctional protection
- Output bypass can be setnput neutral and live wires reverse detection
- Optimized battery configuration: 1K-24V, 2K-48V, 3K-72V
- Charger can be extended
- Diverse options of accessories, intelligent, management
- Intelligent slot optional: USB /SNMP /Dry contact Board

The series has matching
Battery Cabinets (Optional)

Optimized battery configuration
1k-24V,2K-48V,3K-72V

Model			SIPB1KA	SIPB1KD	SIPB2KA	SIPB2KD	SIPB3KA	SIPB3KD
Capacity (VA)			1000VA/800W		2000VA/1600W		3000VA/2400W	
Input	Phase		Single phase & Ground					
	Rated Voltage		220VAC					
	Voltage Range		115VAC-295VAC					
	Frequency Range		45~55Hz±0.5Hz or 55~65Hz±0.5Hz auto sensing					
	Power factor		≥0.98					
	ECO Range		200VAC-240VAC					
	Bypass Voltage Range		186VAC-252VAC					
	Current harmonic		≤7% (100% non-linear load)					
Output	Phase		Single phase & Ground					
	Rated Voltage		200/208/220/230/240VAC (optional)					
	Power Factor		0.8					
	Voltage precision		±2%					
	Output Frequency	Utility Mode	46-54Hz at 50Hz/56-64Hz at 60Hz					
		Battery Mode	(50/60±0.2%)Hz					
	Crest Factor		3 : 1					
	Transfer Time		(Utility←→Battery) = 0ms (Utility←→Bypass) <4ms (Utility←→ECO) <10ms (Battery←→ECO) <10ms					
	Overload Capacity	Battery Mode	108%±5%<Load≤150%±5% exceed 30s ,cut off and alarm 150%±5%<Load<200%±5% exceed 300ms, cut off and alarm					
		Utility Mode	108%±5%<Load≤150%±5% exceed 30s transfer to bypass and alarm, 150%±5%<Load<200%±5% exceed 300ms transfer to bypass and alarm					
	Efficiency	Utility mode	87%		88%		88%	
		Battery mode	85%		85%		85%	
	THD		≤3% (100% linear load) ≤5% (100% non-linear load)					
ECO Efficiency			≥94%					
Battery	Voltage		24VDC	24VDC	48VDC	48VDC	72VDC	72VDC
	Battery configuration		2x12V/9AH		4X12V/9AH		6X12V/9AH	
	Type		12V/9AH Free maintenance High-Rate Sealed Lead Acid battery (Standard)					
	Backup Time		Full load≥5min (Standard), Long time unit depends on the capacity of battery.					
	Charge Current (A)		1A	7A	1A	7A	1A	7A
Communication Interface			RS232 port, optional (USB port, USB card, SNMP card, Dry contact card)					
Operating	Temperature		0...40°C					
Environment	Humidity		0 ~ 95% (Non condensing)					
	Storage temperature		-25...55°C					
	Altitude		< 1500m					
Others	Unit Dimensions (W×D×H) (mm)		440×380×86.5		440×520×131			
	Weight (Kg)		12/14.5	7/9.5	21.5/24.5	11.5/14.3	26/28.8	11.7/14.5
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R					

SIP series
1-3 kVA
1:1 Phase
(PF0.9)

Features

- High power density. Output power factor up to 0.9.
- Rack and tower installation convertible.
- Three segment charging mode to increase battery service life, optimize recharge time.
- Selectable High Efficiency mode of operation.
- Cold start function to startup the UPS without utility.
- Standard communication options: one RS-232 communication port, one USB communication port, and relay output contacts or SNMP card.
- Power Shedding function may turn off uncritical load in battery backup to make longer backup time for critical load.
- Extended runtime with up to four Extended Battery Packs (EBPs) per UPS.
- Emergency shutdown control through the Emergency Power-off (EPO) port.
- Versatile LCD display with setting function.
- With RT LCD design, just press the function button can meet visual angle requirement.
- Easy maintenance design with hot swap pable battery pack from the font.

Two directions LCD display

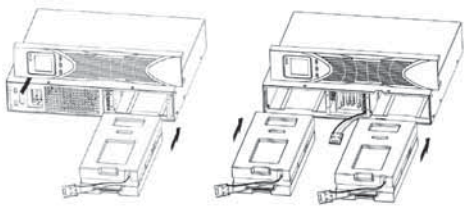
Multifunctional bracket

Rack-Tower convertible

1. Intellient slot (SNMP card, Dry contact etc.)
2. USB port
3. RS232 port
4. FAN
5. Input breaker
6. RJ45 surge Suppress port
7. Input slot
8. Large current output slot
9. Output slots Including twosements
10. EPO

Rear Panel

The series has matching Battery Cabinets (Optional)



Easy for maintenance,hot-swappable battery

Model			SIP1KA	SIP2KA	SIP3KA
Capacity (va/w)			1000VA/900W	2000VA/1800W	3000VA/2700W
Input	Voltage Range		200~290VAC at full load		
	Frequency Range		45~55Hz at 50Hz/55~65Hz at 60Hz (auto-detect)		
	Phase		Single phase with ground		
	Current THDI		<7% (100% nonlinear load)	<7% (100% nonlinear load)	<7% (100% nonlinear load)
	Power Factor		≥0.98		
	Generator Input		Support		
	breaker		7A	16A	25A
	Input Socket		IEC320 C13-10A	IEC320 C20-16A	IEC320 C20-16A
	AC power cord		IEC320 C14-10A	IEC320 C19-16A	IEC320 C19-16A
Output	Voltage		200/208/220/230/240VAC		
	Power Factor		0.9		
	Voltage Regulation		±2%		
	Frequency (Line Mode)		46~54Hz at 50Hz/56~64Hz at 60Hz		
	Frequency (Battery Mode)		50/60Hz±0.02Hz		
	Current Crest Ratio		3:1		
	Harmonic Distortion		≤3% THD (Linear Load) ≤5% THD (Non-Linear Load)		
	Outlet		(IEC C13-10A)×6	(IEC C13-10A)×8	(IEC C13-10A)×8 (IEC C19-16A)×1
	Overload Capacity	Line Mode	30S at 100%~150% ;300ms at >150%		
		Battery Mode	30S at 100%~150% ;300ms at >150%		
Efficiency	AC Mode		Full load≥89%	Full load≥89%	Full load≥89%
	Battery Mode		Full load≥84%		
	ECO Mode		Full load≥94%		
Battery	Number of Batteries Per Set		3	6	6
	Battery Type		12V/7Ah/9Ah	12V/7Ah/9Ah	12V/9Ah
	Backup Time		Estimated remaining time displayed on the LCD		
	Recharge Time (to 90%)		5 Hours	5 Hours	5 Hours
	Charging Current (Max)		1.0A	1.0A	1.0A
	Rated Battery Voltage		36Vdc	72Vdc	72Vdc
	charge mode		3-stage charging		
	Protect		Over-voltage /Over-current /Low-voltage		
	Battery Socket		Anderson like PowerPole Modular Connectors		
Transfer Time	Mains←→Battery Mains←→Bypass		0ms <4ms		
Optional features	Economic Mode (ECO Mode)		Support		
Indicator	LCD Version (with LED)		Load/Battery/Input/Output/Operating Mode Information		
Audible	Battery Mode		Sounding every 4 seconds		
Alarm	Low Battery		Sounding every second		
	Overload		Sounding twice every second		
	Fault		Continuously Sounding		
Physical	Dimension (W×D×H)mm		440×430×86.5	440×690×86.5	
	Net Weight (kg)		16.2	28.1	29.2
Environ ment	Safety		CB		
	Operating Environment		0...40°C		
	Relative Humidity		0~90% (non-condensing)		
	Altitude		<1500m. when >1500m, derating		
	Noise Level		<55dB at 1Meter		
Interface	Smart RS-232/USB (Preferential)		Software supports Windows Family,Linus,FreeBSD		
	Intelligent Slot		SNMP (independent to RS232)		
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R		

*If rated input voltage select to be 200V, the low limit is 180V. If rated input voltage select to be 208V, the low limit is 190V. Under other condition the low limit is 200V.

SIPB series 6-10 kVA 3:1 Phase or 1:1 Phase

The LCD panel can be rotated

The series has matching Battery Cabinets (Optional)

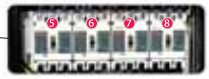
Features

- Online-Double conversion
- Non Transfer Time of output
- PFC technology
- Full digital control (DSP)
- Output power factor: 0.9
- Input current harmonic: 5%
- ECO function
- Charging/Rectifier/Inverter fully digital control technology
- Optimization battery group, the quantity of battery: 16/18/20 pieces (optional)
- Wide input voltage range: 208~478Vac or 120VAC-276VAC
- Wide input frequency range: 40~70Hz±0.5Hz
- Self-testing when UPS startup
- Input over/under-voltage protection
- Automatic bypass
- DC start
- Fault isolation
- Comunication port: RS232 , dry contact,RS485×2
- Options: SNMP card/Centralized moni toring card/ Parallel port module

Model			SIPB6KD	SIPB10KD
Capacity (VA/W)			6KVA/5.4KW	10KVA/9KW
Input	Phase		3 phase 4 wires and Ground or Single Phase & Ground	
	Rated Voltage		380/400/415Vac or 220/230/240VAC	
	Voltage Range		208~478Vac or 120VAC-276VAC	
	Frequency Range		40Hz-70Hz	
	Power Factor		≥0.99	
	Current THDi		≤5% (100% nonlinear load)	
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%) Min. voltage: -45% (optional -20%, -30%) Frequency protection range: ±10%	
	ECO Range		same as the bypass	
	Generator Input		Support	
Output	Phase		Single phase & Ground	
	Rated Voltage		220/230/240VAC	
	Power Factor		0.9	
	Voltage Regulation		±2%	
	Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)	
		Battery Mode	(50±0.2)Hz	
	Crest Factor		3:1	
	THD		≤2% with linear load; ≤5% with non linear load	
	Waveform		Pure Sinewave	
Efficiency			ECO mode≥97%; Normal mode≥90%	
Battery	Voltage		Standard: 192Vdc; Optional Voltage: 216/240Vdc	
	Backup Time		Full load≥2min (Standard), Long time unit depends on the capacity of external batteries Estimated remaining time displayed on the LCD	
	Recharge time to 90%		8~10 hours (Standard)	
	Charging Current		Maximum Current 6A; charge current can be set according to battery capacity installed.	
	Battery Socket		Hardwire	
Transfer Time			Utility to Battery : 0ms; Utility to bypass: 0ms	
Protection	Overload	AC Mode	Load≤110%: last 3min, ≤125%: last 30S, ≤150%: last 1S, ≥150% shut down UPS immediately.	
		Bat. Mode	Load≤110%: last 30S, ≤125%: last 1S, ≤150%: last 200ms, ≥150% shut down UPS immediately.	
		Bypass Mode	40A (Input Breaker)	60A (Input Breaker)
	Short Circuit		Hold Whole System	
	Overheat		Line Mode: Switch to Bypass; Backup Mode: Shut down UPS immediately	
	Battery Low		Alarm and Switch off	
	Self-diagnostics		Upon Power On and Software Control	
	EPO (optional)		Shut down UPS immediately	
	Battery		Advanced Battery Management	
	Noise Suppression		Complies with EN62040-2	
Alarms	Audible & Visual		Line Failure, Battery Low, Overload, System Fault	
Display	Status LED & LCD		Line Mode, Backup Mode, Eco Mode, Bypass Mode, Battery Low, Battery Bad, Overload & UPS Fault	
	Reading On the LCD		Input Voltage, Input Frequency, Output Voltage, Output Frequency, Load Percentage, Battery Voltage, Inner Temperature & Remaining Battery Backup Time	
Physical	Dimension (W×H×D)mm		443×131 (3U) ×580	
	Weight (Kg)		23	25
	Input Connection		Hardwire	
	Output Connection		Hardwire	
	External Battery Connection		Hardwire	
Comunication Interface			USB, RS485, Parallel Port, SNMPcard (optional) ,Centralized monitoring card (optional)	
Environment	Operating Temperature		0...40°C	
	Storage Temperature		-25...55°C	
	Humidity		0 ~ 95% non condensing	
	Altitude		< 1500m	
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R	

SIP380MD 20-80 kVA 3:3 Phase

User Interaceres
It has RS23, RS485, SNMP slot, Parallel port, LBS port, socket outlet, intelligent slot, MODBUS



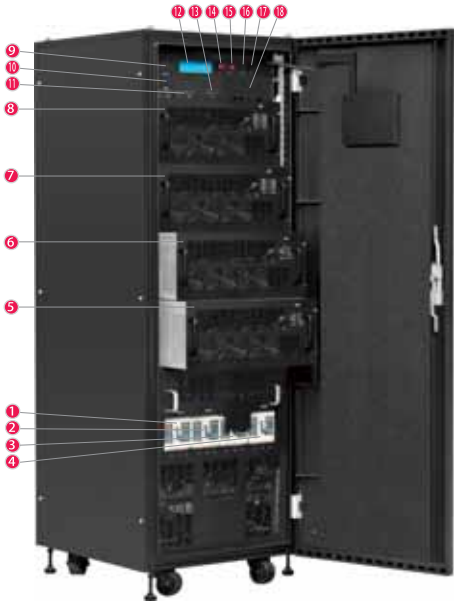
SIP380MD 20-80 kVA
3:3 Phase design
1. Inverter module
2. Inverter module
3. PFC module
4. PFC module
5. Mains breaker
6. Bypass breaker
7. Maintenane breaker
8. Output breaker

Features

- New generation of online double conversion digital UPS
- Advanced IGBT rectifier to have low THDi and high PF
- Wide input voltage range and frequency tolerance
- Load bus synchronization (LBS) function to protect your investment
- Flexibility of configurable battery quantity
- Front accessible module design for ease of maintenance
- Low audible noise: <65dB
- Low output voltage THD
- Parallel redundancy
- ECO mode
- Back-feed protection
- Cold start
- Provide LCD indication and audible alarm function
- Surge, short circuit and overload protection
- Intelligent battery management

Model		SIP380 MD20	SIP380 MD30	SIP380 MD40	SIP380 MD60	SIP380 MD80
Capacity		20KVA	30KVA	40KVA	60KVA	80KVA
		16KW	24KW	32KW	48KW	64KW
Input	maximum Input current	40A	63A	80A	125A	160A
	Rated voltage	380/400/415VAC				
	Voltage Range	Po≤69%:208±5VAC~478±5VAC, Po≥69%:304±5VAC~478±5VAC				
	Frequency range	40±0.5Hz~70±0.5Hz				
	Phase	3 phase 4 wire (3ph+N)				
	Power Factor	>0.99				
	THDi	Input THD≤1.0%,Linear Load:≤3.0%, Input THD≤1.0%, non-linear Load:≤7.0%				
Output	Rated voltage	380/400/415VAC				
	Output current (Full load) 380V	24A	36A	48A	72A	96A
	Output current (Full load) 400V	23A	35A	46A	70A	94A
	Output current (Full load) 415V	22A	33A	44A	66A	88A
	Waveform	Sine wave				
	Crest Factor	≥3:1				
	Frequency	50Hz/60Hz ±0.5Hz (Battery mode), 50/60 (1±1/2/4/5%) Hz (On-Line)				
	THD	Linear Load:≤2.0%, non-linear Load:≤4.5%				
	Phase	3 phase 4 wire (3ph+N)				
	Rated Power factor	0.8				
	DC component	≤500mVDC				
	Voltage precision	Output balanceable: ± 1.0%, Output non-balanceable: ± 3.0%				
	Overload Capability	110% for 60mins;125% for 10min;150% for 1min				
Bypass	Voltage Range	380V : 208/266/304±5VAC~399/418/437/475±5VAC, 400V : 220/280/320±5VAC~420/440/460±5VAC, 415V : 228/290/332±5VAC~436/457/477±5VAC				
	Frequency Range	50 (1±10%) Hz / 60 (1±10%) Hz				
	Phase	3 phase 4 wire (3ph+N)				
	Overload capability	125%~170% for 10min				
ECO	Voltage Range	380V:304±5VAC~399/418±5VAC, 400V:320±5VAC~420/440±5VAC, 415V:332±5VAC~436/457±5VAC				
	Frequency Range	50 (1±10%) Hz / 60 (1±10%) Hz				
	Phase	3 phase 4 wire (3ph+N)				
Battery	Model	Sealed Lead Acid Battery (VRLA)				
	Configurable battery	32/34/36/38/40 pcs				
	Discharge current (320Vdc)	54A	81A	106A	160A	213A
	Charge current (max)	15A			30A	
System	Efficiency (Line mode)	≥90%				
	Efficiency (Battery mode)	≥93%			≥94%	
	Efficiency (ECO)	≥97%				
	Wasting (Line mode)	≤3%				
	Wasting (ECO)	≤2%				
	Noise at 1m	<56dB				
	Running temperature	0~40°C				
	Relative Humidity	0%RH~95%RH (non-condensing)				
	Altitude	1000m output normal power				
	Display	LCD+LED				
	Breaker/fuse	40A	63A	80A	125A	160A
	Remote signaling	Dry contact				
	Communication	RS232/RS485/SNMP				
	Safety	3C/EN60950/EN50091-1				
	EMI	IEC 62040-2 C3 (>16A)				
	EMS	IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge)				
	MTBF	The MTBF of inverter is higher than 50,000 hours,the MTBF of single modules is higher than 250,000 hours, the MTBF of 1+1 expandable modules is higher than 400,000 hours				
	MTTR	The MTTR of each single ups modules is lower 30 mins				
	Dielectric resistance	> 2MΩ (500Vdc)				
	Dielectric strength	2820Vdc, leak current<3.5mA, 1min				
	Surge protection	IEC60664-1 level				
	Vibration impact	Fulfill standard ISTA (International Safe Transmission Association) 1B				
	Transportation	Fulfill standard ISTA (International Safe Transmission Association) 1B				
	Degree of protection	Ip20				
	Dimension (W×D×H)mm	600×730×1200			600×730×1800	
	Packing (W×D×H)mm	735×845×1390			735×845×1990	
	Net Weight (kg)	186	192	203	280	289
	Gross Weight (kg)	226	232	243	328	357
Industry Standard		CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R				

SIP380MD 100-200 kVA 3:3 Phase



1. Mains breaker
2. Bypass breaker
3. Maintenance breaker
4. Output breaker
5. PFC module 1
6. PFC module 2
7. INV module 1
8. INV module 2
9. SNMP slot (just for SNMP card)
10. Intelligent slot
11. Communication interface MODBUS: This port, supporting the MODBUS protocol, is used to connect the external battery monitoring system. RS232: A port access to the computer with monitoring software. The port is used for local monitoring and can be set to parallel monitoring mode. RS485: the UPS has two RS485 ports
12. LCD display and UPS control button
13. Dry contact port: fire/smog/ lightning
14. EPO button: Emergency shutdown
15. Cold start button: start by battery
16. Fuse: over-current protection for output socket
17. Output socket: Nominal current is 5A. It outputs the voltage just the one when UPS works normally and provides max.5A current, which makes the testing, aintenance and running more convenient.
18. Parallel port

Features

- New generation of online double conver sion digital UPS
- Advanced IGBT rectifier to have low THDi and high PF
- Wide input voltage range and frequency tolerance
- Load bus synchronization (LBS) function to protect your investment
- Flexibility of configurable battery quantity
- Front accessible module design for ease of maintenance
- Low audible noise: <65dB
- Low output voltage THD
- Parallel redundancy
- ECO mode
- Back-feed protection
- Cold start
- Provide LCD indication and audible alarm function
- Surge, short circuit and overload protection
- Intelligent battery management

Model		SIP380 MD100	SIP380 MD120	SIP380 MD160	SIP380 MD200
Capacity		100KVA	120KVA	160KVA	200KVA
Input	Current limit	280A			
	Rated voltage	380/400/415VAC			
	Voltage range	Load≤50%:208±5VAC ~ 478±5VAC, Load≥50%:304±5VAC ~ 478±5VAC			
	Frequency range	40±0.5Hz ~ 70±0.5Hz			
	Phase	3 phase 4 wire (3ph+N)			
	Power factor	>0.99			
	THDi	input THD≤1.0%,Linear load:≤3.0%, Input THD≤1.0%, Non-linear:≤7.0%			
Output	Rated voltage	380/400/415VAC			
	Current (Rated full load)380V	121A	145A	194A	242A
	Current (Rated full load) 400V	116A	139A	186A	232A
	Current (Rated full load) 415V	111A	133A	178A	222A
	Voltage waveform	Sinusoidal waveform			
	Crest Factor	≥3:1			
	Frequency	50Hz/60Hz±0.5Hz (battery mode)			
	THD	Linear load : ≤2.0%, Non-linear load:≤4.5%			
	Phase	3 phase 4 wire (3ph+N)			
	Power factor	0.8			
	DC Component	≤500mVDC			
	Voltage regulation	Balanced load: ± 1.0%, Unbalanced load: ± 3.0%			
	Overload capability	≤110% 60mins;≤125% 10min;≤150% 1min			
Bypass	Voltage range	380V : 208/266/304±5VAC ~ 399/418/437/475±5VAC, 400V : 220/280/320±5VAC ~ 420/440/460±5VAC, 415V : 228/290/332±5VAC ~ 436/457/477±5VAC			
	Frequency range	50Hz±10%/60Hz±10%			
	Phase	3 phase 4 wire (3ph+N)			
	Overload capability	125% ~ 170% 10min			
ECO mode	Voltage range	380V:304±5VAC ~ 399/418±5VAC, 400V:320±5VAC ~ 420/440±5VAC, 415V:332±5VAC ~ 436/457±5VAC			
	Frequency range	50Hz±10%/60Hz±10%			
	Phase	3p4w (3p+N)			
Battery	Type	Sealed lead acid maintenance free (VRLA)			
	Configuration	32/34/36/38/40pcs			
	Discharging current (320Vdc)	270A		430A	
	Max charging current	30A		60A	
System	Efficiency in AC mode	≥90%			
	Efficiency in bat. mode	≥93%			
	Efficiency in ECO mode	≥97%			
	Loss in AC mode without load	≤3%			
	Loss in ECO mode without load	≤2%			
	Noise	<62dB (1m)		<65dB (1m)	
	Temperature	0 ~ 40°C			
	Humidity	0%RH ~ 95%RH (non condensing)			
	Altitude	<1000m			
	Display	LCD+LED			
	Air switch/Fuse	225A		315A	
	Remote control	Dry contact			
	Communication	RS232/RS485/SNMP			
	Safety	3C/EN60950/EN50091-1			
	EMI	EN 61000-4-2.3.4..6.8.9.11 Level III, Radiation : IEC 62040-2 C3			
	EMS	EN 61000-4-2.3.4.5.6.8.11 Level			
	MTBF	inverter MTBF >50,000h, single UPS MTBF>250,000h, 1+1 parallel system MTBF>400,000h			
	MTTR	Single UPS MTTR <30min			
	Insulation resistance	500V DC Voltage, >2MΩ			
	Dielectric strength	Voltage tolerance: 2820Vdc, No arc in 1min			
	Surge protection	IEC60664-1 level			
	Lightning protection	6000V/3000A			
	Shock and vibration	ISTA (International Safe Transmission Association) 1B			
	Shipment	ISTA (International Safe Transmission Association) 1B			
	IP	Ip20			
	Dimension (W×D×H)mm	600×730×1800		1200×730×1800	
	Packing (W×D×H)mm	735×845×1990		1335×845×1990	
	Net weight (kg)	295		590	
	Gross weight (kg)	363		720	
Industry Standard		CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R			

SIP380A MD Series
4K-200K
4KVA/6KVA/10KVA
1:1 Phase
4KVA/6KVA/10KVA
3:1 Phase
10KVA/15KVA/20KVA
3:3 Phase

Features

- High frequency and double conversion on-line technology
- Advanced PFC technology
- 3U frame, rack-mounted and tower convertible
- EPO Function
- Wide input voltage range
- Fully digitized microprocessor control
- Parallel redundancy
- Advanced battery management
- Lightning and surge protection, short circuit and overload protection
- Multilingual LCD display and LED display
- EMI/RFI noise filter
- Smart RS232 communication with monitoring software
- Optional SNMP card slot

3:3

The series has matching Battery Cabinets (Optional)

3 U battery box optional

This UPS series is kind of modular UPS produced by Kstar company. The product combines the modular design with the N+X parallel redundancy technology. The maximum capacity includes 50KVA/60KVA/100KVA/200KVA which is convenient for flexible configuration. The SIP380A MD series UPS incorporates the industry-leading technology and ideas, and have done better in component selection, PCB layout, thermal design, control algorithms, appearance and ect.; the hot-swap technology is used between the module and the enclosure, which greatly reduce the maintenance time for system. It also adopts large touchable LCD and menu design, so all the information about UPS can be monitored through the LCD, which helps to get the operation clearly; each module has both the LCD and LED display, wihich allows the users to get the working status and operating parameters intuitively. The SIP380A MD series UPS adopts the advanced DSP digital control technology. Each module uses a separate control panel, so it will easily remove from the UPS system when it is failure, which makes the system more stable and reliable.

SIP380A MD Series 4K-200K 4KVA/6KVA/10KVA 1:1 Phase 4KVA/6KVA/10KVA 3:1 Phase, 10KVA/15KVA/20KVA 3:3 Phase

- Digital control
- 19-inch standard cabinet.1.4-meter and 2-meter high cabinets are provided according to the user's requirement.
- Modularized design
- High power-density design.The height of the single module is 3U, a standard 1.4m cabinet can hold 5 pieces of modules (the maximum power is 20KVA), the whole capacity can reach 200KVA; a standard 2m cabinet can hold 10 pieces of modules (the maximum power is 20KVA), the whole capacity can reach 200KVA.
- N+X parallel redundancy.This series UPS adopts N+X parallel redundancy design, users can set different redundancy according to the importance of the load. While the number of redundancy modules are more than two, the availability of UPS system will achieve 99.999% and the MTBF will be more than 15,000,000 hours, which can satisfying the reliability requirement of critical load. The UPS redundancy degree can be set through the LCD, when the load exceeds the set value, the UPS will alarm in time.
- Flexible parallel redundancy setting.This series can set the number of redundancy modules. When the load exceeds the redundancy setting, UPS can still work normally and at the same time send out corresponding warning as long as the load doesn't exceed the total capacity of modules.
- Parallel Redundant of the control system
- Optimizing distributed convergence for the cabinet
- Separated Bypass
- Parallel units share battery group
- Optional external battery quantity (16-20pcs or 32-40pcs)
- Freely set the charge current
- Intelligent charging
- Super-large LCD display (with touchable screen)

Model			SIP380A50 MD-11	SIP380A100 MD-11	SIP380A50 MD-31	SIP380A100 MD-31	SIP380A60 MD-33	SIP380A100 MD-33	SIP380A200 MD-33
Capacity	UPS cabinet		4~50KVA 3.2~40KW	4~100KVA 3.2~80KW	4~50KVA 3.2~40KW	4~100KVA 3.2~80KW	10~60KVA 9~54KW	10~100KVA 9~90KW	10~200KVA 9~180KW
	HPM module		4KVA/3.2KW, 6KVA/4.8KW, 10KVA/8KW				10KVA/9KW, 15KVA/13.5KW, 20KVA/18KW		
Input	Phase		Single phase & Ground		3 phase 4 wires and Ground or 1Phase 2 Wires and Ground		3 phase 4 wires and Ground		
	Rated Voltage		220/230VAC		380/400VAC or 220/230VAC		380/400/415Vac		
	Voltage Range		120~276VAC		208~478VAC or 120VAC-276VAC		208~478VAC		
	Frequency Range		40~70Hz						
	Power Factor		≥0.99						
	Bypass Voltage Range		Max.voltage: +15% (optional +5%, +10%, +25%), Min. voltage: -45% (optional -20%, -30%), Frequency protection range: ±10%»						
	Current Harmonic		≤5% (100% non-linear load)				≤3% (100% nonlinear load)		
	Generator Input		Support						
Output	Phase		Single phase & Ground				3 Phase 4 Wires and Ground		
	Rated Voltage		220/230VAC				380/400/415Vac		
	Power Factor		0.8				0.9		
	Voltage Precision		±2%						
	Output Frequency	Utility Mode	±1%, ±2%, ±4%, ±5%, ±10% of the rated frequency (optional)						
		Battery Mode	(50/60±0.2%)Hz						
	Crest Factor		3:1						
	THD		≤2% with linear load , ≤5% with non linear load						
Efficiency			Normal mode≥90%				≥92% at normal mode		
Comunication Interface	UPS cabinet		RS232, RS485, Dry Contact, Intelligent slot x 2 (SNMP card , Relay card optional)						
	HPM series UPS module		RS232						
Battery	Voltage		±96V\±108V\±120V DC; battery quantity (optional)				±192V\±204V\±216V\±228V\±240V DC; battery quantity (optional)		
	Charge Current (A)	UPS cabinet	30A Max.	60A Max.	30A Max.	60A Max.	18A Max.	30A Max.	60A Max.
		HPM module	6A Max. (charge current can be set according to battery capacity installed)						
	Backup time		Depends on the capacity of external batteries						
Transfer Time			Utility to Battery : 0ms; Utility to bypass: 0ms						
Protection	Overload	AC Mode	Load≤110%: last 60min, ≤125%: last 10min, ≤150%: last 1min, ≥150% shut down UPS immediately						
		Bat. Mode	Load≤110%: last 30S, ≤125%: last 1S, ≤150%: last 200ms, ≥150% shut down UPS immediately				Load≤110%: last 10min, ≤125%: last 1min, ≤150%: last 1S, ≥150% shut down UPS immediately		
		Bypass Mode	Breaker (4KVA:32A / 6KVA:40A / 10KVA:60A)				Breaker (10KVA: 20A / 15KVA: 32A / 20KVA:40A)		
Operating Environment	Temperature		0...40°C						
	Humidity		0 ~ 95% non condensing						
	Storage temperature		-25...55°C						
	Altitude		< 1500m						
Other	Unit Dimensions (W×D×H) mm	UPS cabinet	600×840×1400	600×840×2000	600×840×1400	600×840×2000	600×840×1400		600×840×2000
		HPM module	443x580x131 mm (3U)						
	Weight (Kg)	UPS cabinet	150	213	150	213	145	170	230
		HPM module	4KVA: 21KG ; 6KVA:23KG; 10KVA:25KG				10KVA: 26KG; 15KVA: 30KG; 20KVA:31KG		
Industry Standard			CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R						

SIP380 series
10-800 kVA
3:3 Phase

Features

- Advanced working mode
- Double Conversion on-line design, which makes the output a pure sine wave source with tracking frequency , phase-lock and voltage regulation, noise suppression, and without power fluctuation interference, providing the load with more comprehensive protection.
- Zero transfer time of output, satisfy high standard power requirements of precision equipment.
- Input power factor is 1.0 with the filter, which improves the energy efficiency, reduces the harmonic pollution of the power grid and lowers the UPS running cost.
- Full DSP Control
- The digital control brings the excellent performance, avoids the risks because of analog devices failure and makes the control system more stable and reliable.

500kVA

300kVA

- High output power factor
- The output power factor can reach 0.9 (lagging), which has a higher actual load capacity, saving the user's investment.
- Strong environmental adaptability
- The range of AC input voltage is (380Va/ 400Vac/415Vac)±25% thereby reducing the battery using frequency and greatly extending the battery life.
- Wide input frequency range from 45Hz ~ 65Hz, ensure all types of fuel generators connected work stable.
- Optimization of high-performance battery
- Adapt intelligent battery management (ABM) technology, thus extending battery life and reducing battery maintenance times.
- Advanced floating switching and charging technology maximums the activation of the battery, thus saves the charging time and extends the battery life.
- Battery discharge time prediction; When battery discharging, the system detects the discharge current and predicts the discharge time according to the battery intelligent management, thus informs the users to do the appropriate measures.
- The battery self-test on a regular basis to detect battery problems in time, Set the start time and self-test duration according to the different time periods (monthly or weekly).
- Wide battery voltage range: 320-490Vdc makes the configuration of battery quantity more flexible.
- N+X Parallel redundancy
- Adapt N+X parallel redundant design. Users can configure different redundancy number according to the importance of load.
- Easy to realize the parallel function. The parallel can be achieved just by connecting the parallel cables and doing the setting on UPS. 6 units can be connected in parallel at most.
- Non-fixed Master-Slave relationship
- Among the several UPS in parallel, the unit startup first is Master UPS, the others are Slave UPS. The master and slave can be exchanged. If the inverter of one UPS fails, the UPS will automatically cut off the output, then the load will be powered by remained UPS.
- Strong overload capability
- When overload 110%/125%/150% , it can be maintained 60min /10min/1min.
- Compatible with the generator
- Specially designed power walk in function reduces the in-rush current when system starts, thus lowers the requirement of the generator that the parallel system demands.
- LBS synchronization
- The LBS synchronization function supports the two independent power inputs, which improves the reliability of the system.
- Comprehensive and reliable protection
- Self-diagnosis function before start-up, avoid the risks that the failure may lead to.
- The multi-protections such as AC input under/over voltage, overload, short-circuit, over-current, over bus voltage, over-temperature, fan failure, auxiliary power failure, battery under voltage, battery over-charge and so on greatly ensure the system stability and reliability.
- Bypass function. When overload or UPS fails, it can transfer to bypass without interruption to provide AC power to load and provide the alarm information as well.
- EPO function
- An EPO button is embodied in the LCD display panel. Press the EPO button in emergency can shut down the UPS. The EPO button adapts the concave design with a transparent cover, which can avoid misuse.
- User-friendly network management
- English LCD accurately displays the status of operation and data for users.
- Communication with computer can be realized by RS232 with corresponding monitoring software. The various parameters can be shown on the communication interface.
- External SNMP adapter. The UPS with remote network management capability can provide real-time data for communication and management through a variety of network management systems.

SIP380 series 10-800 kVA 3:3 Phase

Model	SIP380-10	SIP380-20	SIP380-30	SIP380-40	SIP380-60	SIP380-80
Capacity (VA)	10KVA	20KVA	30KVA	40KVA	60KVA	80KVA
Power (W)	9KW	18KW	27KW	36KW	54KW	72KW
Input						
Voltage range	(380Vac/ 400Vac/415Vac)±25% (3p, 5w)					
Frequency range	50/60Hz±5Hz auto-sensing					
Power factor	>0.8 (without filter), 1 (with filter)					
Rated output current	15A	30A	45A	60A	90A	120A
Output						
Voltage range	380Vac/400Vac/415Vac±1%					
Frequency	Auto tracking the input frequency					
Frequency regulation (battery mode)	50Hz/60Hz±0.05%					
Waveform	Sine wave					
Power factor	0.9 (lag)					
THD	Linear load <3%, Non-linear load <5%					
Overload	110%/125%/150% : 60min/10min/1min					
Crest factor	3 : 1 (max)					
Efficiency	88%	89%	90%	90%	91%	91%
Transfer time						
AC mode Battery mode	0ms					
Bypass						
Rated voltage	380/400/415Vac					
Voltage range	Upper limit : +10%, +15%, +20% (can be set) Lower limit : -10%, -20%, -30%,-40% (can be set)					
Rated frequency	50/60Hz (auto-sensing)					
Frequency range	±10% (±2.5%, ±5%, ±20% can be set)					
Transfer time	0ms/1ms					
Battery						
Battery voltage (VDC)	384V					
Display						
LED	Input , inverter, bypass, battery, output status					
LCD	I/O voltage, frequency, power, power factor, battery voltage, current, battery status, load percentage, UPS status, history record, parameters setting					
Communication						
Interface	Dry contact, RS232, RS485, SNMP card					
Environment						
Working temperature	0...40°C					
Humidity	0 ~ 95% non-condensing					
Storage temperature	-25...55°C					
Noise (1m)	<63dB			<67dB		
Physical characteristics						
Net weight (Kg)380V	225	275	320	335	490	575
Gross weight (Kg)380V	280	330	375	390	560	645
Dimension (W×D×H)mm	555×744×1220				800×760×1400	
Options	Harmonic filter, SNMP adapter, LBS cables, battery temperature sensor, battery ground fault detection					
EMC Safety Standards						
EMI	IEC62040-2; the output of UPS required by EMC (>16A)					
EMS	IEC61000-4-2 (ESD) : Anti-static ability IEC61000-4-3 (RS) : Anti-radiation interference ability IEC61000-4-4 (EFT) : Anti-interference of power pulse ability IEC61000-4-5 (Surge) : Lightning /surging protection ability					
Industry Standard	CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R					

Model	SIP380-100	SIP380-120	SIP380-160	SIP380-200	SIP380-300	SIP380-400	SIP380-600	SIP380-800	SIP380-100
Capacity (VA)	100KVA	120KVA	160KVA	200KVA	300KVA	400KVA	500KVA	600KVA	800KVA
Power (W)	90KW	108KW	144KW	180KW	270KW	360KW	450KW	540KW	720KW
Input									
Voltage range	(380Vac/ 400Vac/415Vac)±25% (3ph, 5w)								
Frequency range	50/60Hz±5Hz auto-sensing								
Power factor	>0.8 (without filter), 1 (with filter)>0.85,								
Rated output current	152A	182A	243A	304A	456A	608A	760A	912A	1216A
Output									
Voltage range	380Vac/400Vac/415Vac±1%								
Frequency	Auto tracking the input frequency								
Frequency regulation (battery mode)	50Hz/60Hz±0.05%								
Waveform	Sine wave								
Power factor	0.9 (lag)								
THD	Linear load <3%, non-linear load <5%								
Overload	110%/125%/150% : 60min/10min/1min								
Crest factor	3 : 1 (max)								
Efficiency	91%	91.5%	91.5%	92%	93%	94%	94%	94%	94%
Transfer time									
AC mode Battery mode	0ms								
Bypass									
Rated voltage	380/400/415Vac								
Voltage range	Upper limit : +10%, +15%, +20% can be set Lower limit : -10%, -20%, -30%,-40% can be set								
Rated frequency	50/60Hz (auto-sensing)								
Frequency range	±10% (±2.5%, ±5%, ±20% can be set)								
Transfer time	0ms/1ms								
Battery									
Battery voltage (VDC)	384V						480V		
Display									
LED	Input, inverter, bypass, battery, output status								
LCD	I/O voltage, frequency, power, power factor, battery voltage, current, battery status, load percentage, UPS status, history record, parameters setting								
Communication									
Interface	Dry contact, RS232, RS485, SNMP card								
Environment									
Working temperature	0...40°C								
Humidity	0~95% non-condensing								
Storage temperature	-25...55°C								
Noise (1m)	<68dB	<68dB	<70dB	<72dB	<72dB	<72dB	<72dB	<72dB	<72dB
Physical characteristics									
Net weight (Kg) 380V	1060	1060	1195	1380	1780	2050	3700	4500	6400
Gross weight (Kg) 380V	1240	1240	1375	1540	1910	2180	3950	4750	6700
Dimension (W×D×H)mm	1640×900×1900				1640×1040×1900		2800×1040×1900		3900×1100×1950
Options	Harmonic filter, SNMP adapter, LBS cables, battery temperature sensor, battery ground fault detection, Bypass current-sharing inductor								
EMC Safety Standards									
EMI	IEC62040-2; the output of UPS required by EMC (>16A) (>16A)								
EMS	IEC61000-4-2 (ESD) : Anti-static ability IEC61000-4-3 (RS) : Anti-radiation interference ability IEC61000-4-4 (EFT) : Anti-interference of power pulse ability IEC61000-4-5 (Surge) : Lightning /surging protection ability								
Industry Standard	CE, EN/IEC 62040-2, EN/IEC 62040-1-1, GOST R								

SIP380A series
10 -120 kVA

SIP380A series UPS perfectly fits for the protection of critical loads and equipment when risks related to a poor quality of supply are not allowed.

SIP380A series includes models for 10, 12, 15 and 20 kVA with three-phase and single-phase input and single-phase output, as well as models for 10, 12, 15, 20, 30, 40, 60, 80, 100 and 120kVA with three-phase input and output and of four standard sizes depending on the power. “On-line” technology of double conversion is used in this series of UPS in according to VFI-SS-111 classification, as defined by the IEC EN 62040-3 standard.

UPS of SIP380A series is designed and manufactured using the most state-of-the-art technologies and components providing maximum protection of connected loads, energy saving and nil impact on external network.

In UPS of power 10 to 40 kVA, internal storage batteries can be installed. The entire SIP380A series can be equipped with external battery boxes of different sizes depending on the required time of off-line operation.

UPS of power 10 to 20kVA are also produced in a compact enclosure to save space.

Features:

- SIP380A series UPS can be used in various fields due to its flexible configuration, additional accessories and options, as well as the following characteristics:
- Efficiency output in double conversion mode of up to 96.5%;
- Power factor of 0.9 so SIP380A can be used for connection of capacitive loads (blade-servers, etc.) without any decrease in active power, beginning from advance of 0.9 up to lagging of 0.9; power factor is 0.8 for configuration 3/1 and 0.7 for configuration 1/1;
- Nonlinear distortion factor of current and voltage at input and output is less than 3%;
- Wide range of input voltages without change-over to batteries: 320 V to 480 V at 100% load, 240 V to 480 V at 50% load (at rated voltage of 400 V);
- Wide range of input frequencies without change-over to batteries: 40 Hz to 72 Hz;
- High overload capability of invertor (115% – unlimited, 125% – 10 min, 150% – 1 min, 168% – 5 s);
- Operating modes: On Line, Eco, Smart Active, Stand By Off;
- Frequency converter operating mode;
- Special design of parallel bus: UPS operates with parallel connection even if a parallel bus cable is broken;
- “Hot” extension mode is provided for, when an additional UPS can be connected to the system without stopping operation of existing units and, therefore, without disconnection of load critical to the quality of supply. The connected UPS will be automatically configured and activated in the system;
- Small overall dimensions;
- Low noise;
- Use of the IGBT technology;
- Function of automatic control of storage batteries charging (Battery Care System);

Standard configuration:

- Graphical display in Russian;
- “Power Share” sockets configured to increase off-line operation time for the most critical loads or activated only when the external supply network fails;
- USB interfaces and “dry” contact board installed at the factory;
- System of fans smart control;
- “Cold” start – ability of UPS activation even if the external supply voltage is lost;
- Soft start of UPS;
- Link by RS-232, USB, AS-400 interfaces;
- Remote Emergency Power Off (REPO).

Optional equipment and functions:

- Many optional circuit boards for synchronization and monitoring (SNMP, RS-485, RS-232, multifunctional monitoring (8 inputs, 8 outputs), temperature and humidity sensors, circuit boards for

synchronization with diesel generator set and with independent power supply);

- Optional use of two independent inputs for electrical supply network;
- Optional connection of a temperature sensor for external storage battery units to compensate charging voltage;
- Additional chargers to optimize charging time;
- Additional storage battery units of various sizes and capacity to prolong off-line operation of UPS;
- Optional isolation transformers to vary neutral connectivity in case of separate power supplies or for galvanic isolation of input/output;
- Parallel operation of up to six UPS can be used both for higher power and higher redundancy level of the system of up to N+5.

Nil impact on external network:

Due to the used technology, SIP380A has not any impact on a power supply (whether it be external network or generator):

- Distortion of input current less than 3%;
- Input power factor 0.99;
- "Power walk-in" function for smooth start of rectifier;
- Switch-on delay in case of restart of rectifiers after resumption of supply (if several UPS are available in the system).

Also SIP380A operates as a filter and corrects power factor of supply network at the input of UPS as it eliminates harmonics and reactive power generated by connected loads.
High efficiency output (up to 96.5%) providing a saving of over 50% of dissipated energy per annum in comparison with existing analogous UPS with efficiency output of 92% available at the market.

Maximum care of batteries:

Care of storage batteries is very important to provide operability of UPS in emergencies. Specially developed Battery Care System provides functions and activities to charge storage batteries resulting in the best performance and long life.

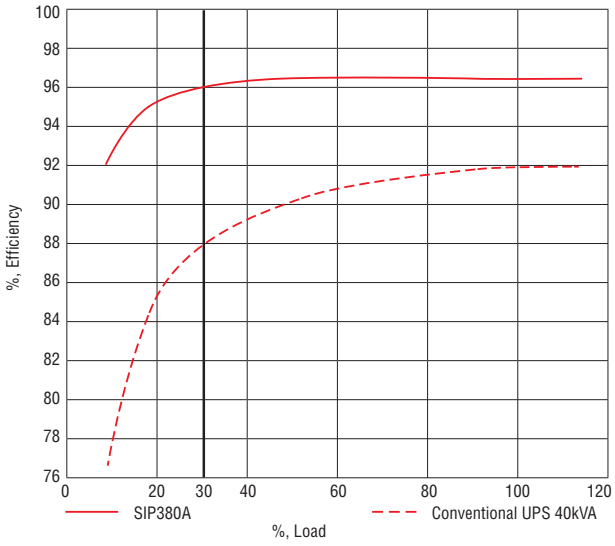
Battery charging: SIP380A can operate with sealed VRLA lead acid batteries of AGM or GEL structure and nickel cadmium batteries. Depending on the type of batteries, there are different methods of charging:

- Charging with a single level of voltage, typically used for most popular type of batteries (VRLA AGM)
- Charging with two levels of voltage, according to the IU-characteristic curve of the battery.

Charge blocking system to reduce consumption of the electrolyte and further extend the service life of VRLA batteries.

Compensation of the charging voltage depending on temperature in order to prevent overcharging and overheating of batteries.
Battery test for timely diagnosis of shorter service life and possible failures.

Protection against deep discharges: in case of extended discharges and low load of batteries, the end-of-discharge voltage is increased according to recommendations of battery manufacturers to avoid battery failure or performance degradation.



Ripple (residual AC components of charge current) is one of the main causes affecting reliability and service life of batteries. SIP380A using high-frequency charger, reduces the ripple to acceptable level thereby prolonging battery service life and keeping their performance high for a long time.

Wide range of voltage: rectifier can operate in a wide range of input voltages (down to -40% at half load); therefore battery switching is less frequent and, due to this the batteries service life is longer.

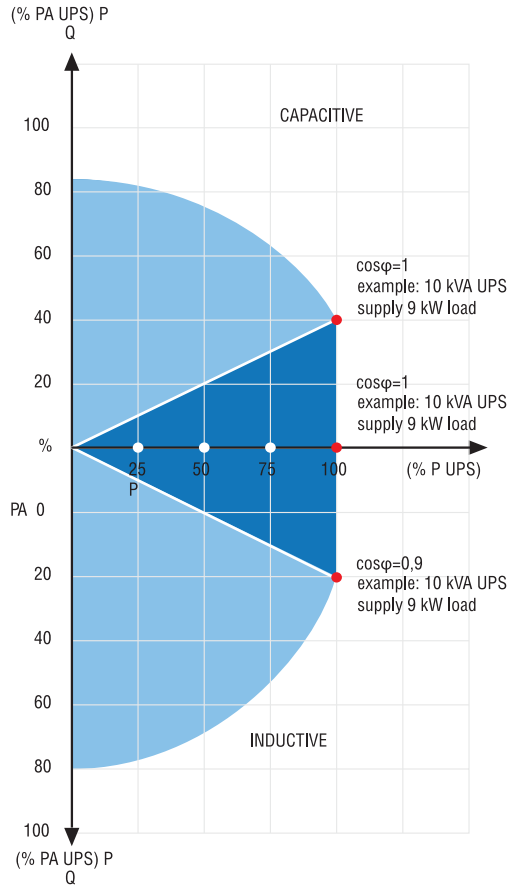
Maximum reliability and flexibility:

Up to six UPS can be connected to operate in parallel or in N+1 redundancy mode. UPS continue to operate in parallel even if an interconnecting communication cable is broken (Closed Loop).
"Hot" extension is provided for when an additional UPS can be connected to the system without stopping operation of existing equipment and, therefore, disconnection of loads critical to the quality of supply. The connected UPS will be automatically configured and activated in the system.

Exceptional performance and efficiency of SIP380A UPS with very small sizes are achieved due to the technology and components with optimum characteristics:

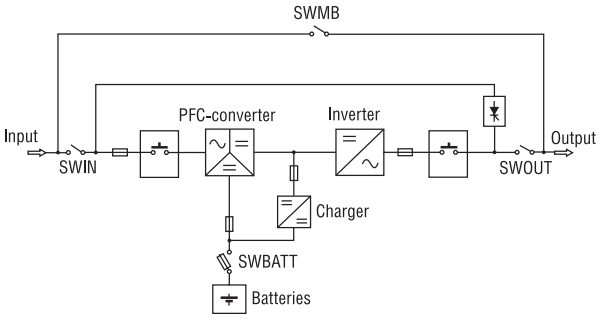
- The smallest size of floor-mounted UPS in this category: only 0.26 m2 for 20 kVA SIP380A with batteries;
- The type of input stage provides a power factor close to 1 and a low level of current distortion without using bulky and expensive filters;
- Output power factor of 0.9 provides up to 15% of extra active power in comparison with conventional UPS available at the market.

Therefore, a wide margin for further extension of load is provided when UPS is selected.



UPS MPX is manufactured according to requirements of:

- GOST R IEC 60950-1-2005;
- GOST R 50745-99;
- GOST R 51318.22-99;
- GOST R 51317.3.2-2006 (sections 6 and 7);
- GOST R 51317.3.3-2008;
- EN 62040-1-1;
- EN 62040-2;
- EN 62040-3.



Advanced Communication:

SIP380A is equipped with a graphic display that provides UPS status, parameters, messages and alarms in Russian:

- Advanced communication for all operating systems and network environments: monitoring and shut-down software for Windows (7, Vista, 2003, XP), Linux, Mac OS X, Sun Solaris, Linux, Novell and other Unix operating systems.

Standard Dimensions of UPS SIP380A

- Compatible with TeleNetGuard remote service monitoring system;
- Serial ports RS-232 and USB;
- 3 slots for installation of additional communication devices (network adapter, dry contacts, etc.);
- REPO (Remote Emergency Power Off) to shutdown UPS with remote emergency button;
- Input for connection of an auxiliary contact of an external manual bypass;
- Input for synchronization from an external source;
- Panel of graphic display for remote connection.

MODELS	SIP380A10*	SIP380A1*	SIP380A15*	SIP380A20*	SIP380A30	SIP380A40	SIP380A60	SIP380A80	SIP380A100	SIP380A120
Topology	On-line Double conversion									
INPUT										
Rated voltage	380-400-415 V, 3+N+PE									
Rated frequency	50/60 Hz									
Frequency range	40 to 72 Hz									
Power factor	0.99 at full rated linear load									
Current distortion	THDi<3%									
BYPASS										
Rated voltage	380-400-415 V									
Number of phases	1+N+PE / 3+N+PE				3+N+PE					
Voltage range	180 to 264V (at option)									
Rated frequency	50 or 60Hz (at option)									
Frequency range	±5% (at option)									
OUTPUT										
Rated power, kVA	10	12	15	20	30	40	60	80	100	120
Active power, kW	8**/9	9.6**/10.8	12**/13.5	16**/18	27	36	54	72	90	108
Power factor	0.8** / 0.9									
Number of phases	1+N+PE / 3+N+PE				3+N+PE					
Rated voltage, V	380-400-415 VAC (at option)									
Static variation	±1%									
Dynamic variation	±3%									
Crest-factor (Ipeak/Irms)	3:1									
Voltage distortion	<1% at linear load or <3% at non-linear load									
Frequency	50 / 60 Hz									
Frequency stability in battery mode	0.01%									
Efficiency output in battery mode (wDC/AC)	≥92.5%		≥93.5%		≥95.3%		≥95%		≥93%	
Efficiency output in on-line mode (AC/AC), % at load: • **100%** • **75%** • **50%** • **25%**	 93.5 93.0 91.8 89.3	 93.6 93.3 92.4 89.8	 94.0 93.8 93.0 91.6	 94.0 94.0 93.8 91.6	 96.1 96.2 96.1 95.0	 96.0 96.2 96.2 95.7	 95.4 95.5 95.5 94.6	 95.2 95.6 95.6 94.9	 93.6 94.0 93.7 92.3	 93.5 94.0 93.8 92.5
Efficiency output in SmartActive mode	Up to 99%									
Overload	115% – unlimited, 125% – 10 min, 150% – 1 min, 168% – 5 s									
BATTERIES										
Type	Sealed / gel lead acid									
Number in a set	40									
Internal storage battery	Yes						No			
INSTALLATION DETAILS										
Weight without storage batteries, kg	80*** 105	82*** 110	90*** 115	95*** 120	135	145	190	200	220	380
Dimension (HxWxD), mm	935x320x840*** 1,325x440x850				1325x440x850		1605x500x850			1,905x750x855
Communication	3 slots for communication interfaces RS-232 / USB									
Heat release (at pf=0.8)	0.63 kW, 540 kCal/h	0.75 kW, 645 kCal/h	0.86 kW, 740 kCal/h	1.15 kW, 990 kCal/h	1.1 kW, 946 kCal/h	1.5 kW, 1,290 kCal/h	2.61 kW, 2,245 kCal/h	3.65 kW, 3,140 kCal/h	6.9 kW, 4,074 kCal/h	7.2 kW, 6,191 kCal/h
Air flow rate	340 m^3/h	400 m^3/h	460 m^3/h	615 m^3/h	587 m^3/h	800 m^3/h	2,100 m^3/h	2,100 m^3/h	2,600 m^3/h	2,600 m^3/h
Distance to wall, mm	300									500
Cables connection	Below at the front									
Max. section with cable end, mm^2	10				25		95			95
Max. section without cable end, mm^2	16				35		95			95
Operating temperature	0°C to +40°C									
Relative humidity	90% without condensate									
Color	Dark-grey RAL 7016									
Noise	<52 dBA at 1m				<48 dBA at 1m		<52 dBA at 1m		<65 dBA at 1m	
Degree of protection	IP20 (other IP degree on request)									
References	GOST R; European Directives: Low Voltage Directive LV2006/95/EC Electromagnetic Compatibility Directive EMC 2004/108/EC Standards: Safety IEC 62040-3, VFI-SS-111									

* Model of SIP380A with single-phase input and single-phase output (only for UPS of 10 to 20 kVA) can be ordered
** Model 3/1
*** Model SIP380A Compact

SIP380B series
100- 600 kVA

SIP380B UPS range features all the most state-of-the-art technologies to increase the following UPS performances:

- On-line double conversion technology;
- Isolated Gate Bipolar Transistors (IGBT) in rectifier and inverter;
- Digital Signal Processor (DSP) control;
- Manufacturing according to industrial standards;
- Higher mechanical and electrical stability;
- Dust resistance;
- Galvanic load power-supply isolation.

According to IEC EN 62040-3, these UPS are classified as VFI-SS-111 (Voltage and Frequency Independent), that is stability of consumer supply is independent of parameters of UPS input network.

SIP380B UPS ensures maximum reliability, protection and the highest quality of electric supply in the most severe operating environment for a wide scope of both computer and industrial critical loads. In particular, for the equipment used in the most important fields, such as:

- Health care;
- Nuclear industry;
- Energy industry;
- Financial sector;
- Transport;
- Telecommunications;
- Data processing centers;
- Any other fields where continuous operation of critical equipment is required.

Features:

- Power factor of 0.9;
- Input current distortion of less than 3%;
- Input power factor of 0.99;
- “Power walk-in” function for smooth start of rectifier
- Switch-on delay in case of restart of rectifiers after resumption of supply (if several UPS are available in the system);
- SIP380B UPS operates as a filter and corrects power factor of supply network at the input of UPS as it eliminates harmonics and reactive power generated by connected loads;
- High efficiency output of up to 94% in On-line mode;
- Compact: footprint of 0.85m2 for 250kVA UPS;
- Light weight for such powers;
- Double protection of load – both electronic and galvanic – integrated isolation transformer at the inverter output
- Up to 8 UPS operating in parallel or redundancy of up to N+7;
- Capable of operation either with separate battery cabinet or common system cabinet in a parallel system;
- Backfeed protection;
- Close-to-wall installation;
- High overload capacity – 60 minutes at 110% load;
- Function of storage battery charging switch-off when operating with an emergency generator to save fuel.

Nil impact on external network:

Besides advantages of conventional series UPS, SIP380B model provides extra advantages – nil impact on external network – due to the use of IGBT rectifiers.
SIP380B does not influence a power supply (external network or generator):

- Input current distortion of less than 3%;
- Input power factor of 0.99;
- “Power walk-in” function for smooth start of rectifier;
- Switch-on delay in case of restart of rectifiers after resumption of supply (if several UPS are available in the system).

Also SIP380B operates as a filter and corrects power factor of supply network at the input of UPS as it eliminates harmonics and reactive power generated by connected loads.

Maximum care of batteries:

Battery Care System is used in SIP380B as in SIP380A series. This system optimally uses storage batteries in order to achieve the best performance and long service life.

Standard configuration:

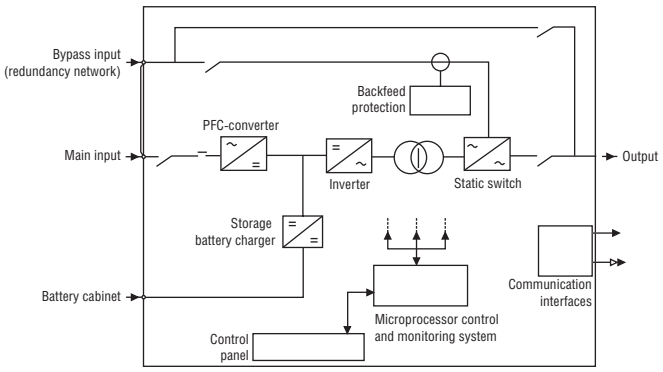
- Isolation transformer at inverter output;
- Two serial ports RS-232;
- Port AS400 (dry contacts);
- Remote Emergency Power Off (REPO);
- 2 slots for installation of additional communication devices (network adapter, dry contacts, etc.);
- Slot for installation of parallel operation circuit board;
- Input for connection of an auxiliary contact of external manual bypass;
- Input for synchronization from external source;
- Optional use of two inputs from power network.

Optional equipment and functions:

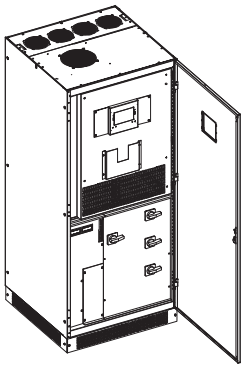
- Temperature sensor for external storage battery units to compensate charging voltage;
- External service bypass;
- Synchronizing device with independent power supply;
- Interface for generator connection;
- Set for parallel loop connection;
- SNMP adapter (ETHERNET);
- RS-485 adapter (protocols: J-Bus/ModBus or ProfiBUS);
- Isolation transformer at input;
- Remote panel with graphic display;
- Software for control and shut-down of operating system;
- Fans failure alarm;
- Additional battery units of various sizes and power to increase time of off-line operation of UPS.

Certificates:

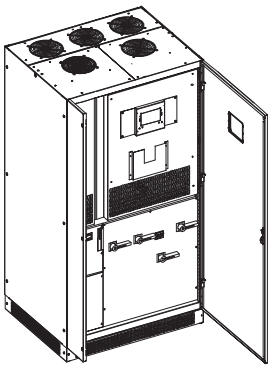
- GOST R;
- EN 62040-1-1;
- EN 62040-2.



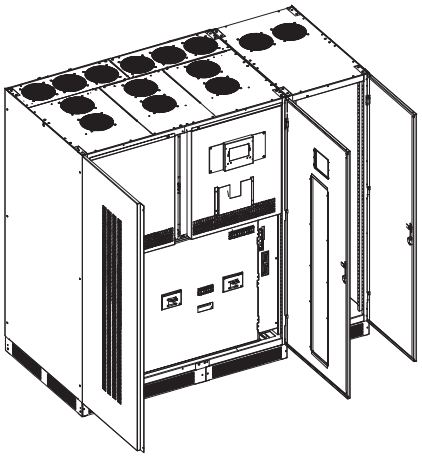
SIP380B 100-120kVA



SIP380B 160-250kVA



SIP380B 300-400kVA



SIP380B series 100- 600 kVA

MODELS	SIP380B100	SIP380B120	SIP380B160	SIP380B200	SIP380B250	SIP380B300	SIP380B400	SIP380B500	SIP380B600
Power, kVA	100	120	160	200	250	300	400	500	600
INPUT									
Rated voltage	380-400-415 VAC, three-phase								
Voltage range without battery operation	300-480 VAC, three-phase at 100%, 230-480 VAC, three-phase at 65%								
Frequency	45 to 65 Hz								
Frequency range	+2% (at option from +1% to 5%, set from front panel)								
Power factor at full load	0.99								
Current distortion	THDi<3%								
Rated consumption current at rated input voltage, A	141	169	226	281	352	423	564	702	842
Max. consumption current at full load and battery charging, A	159	190	254	317	397	476	635	794	953
Smooth start	0 to 100% from 1 to 30 s (at option)								
Standard configuration	Feedback protection, disconnectable bypass line								
BATTERIES									
Type	Lead acid, sealed/gel, nickel cadmium								
Ripple	Nil								
Temperature compensation	-0.5 Vx°C								
Number in a set, jars / cells	From 37 / 222 to 43 / 258								
Internal battery	None								
Max. battery charge current when using 240 cells, A, at load:									
• 100%	22	25	35	45	55	65	90	110	135
• 90%	40	48	60	80	100	120	160	200	240
• 80%	50	65	90	110	140	170	220	280	340
• <70%	70	85	110	130	165	200	260	330	390
Rated power, kVA	100	120	160	200	250	300	400	500	600
Active power, kW	90	108	144	180	225	270	360	450	540
Number of phases	3+N								
Rated voltage	380-400-415 VAC, three-phase+N								
Static voltage variation	±1%								
Dynamic voltage variation	±5% for 10 ms								
Voltage distortion	<1% at linear load or <3% at non-linear load								
Crest-factor (Ipeak/Irms)	3:1								
Frequency stability in battery mode	0.05%								
Rated frequency	50 or 60 Hz (at option)								
Efficiency output in battery mode (DC/AC)	Up to 94%								
Efficiency output in on-line mode (AC/AC), % at load:									
• 100%	93	93	93	93	93	93	93	93	93
• 75%	93,5	93.5	94	94	94	94	94	94	94
• 50%	93,5	93.5	94	94	94	94	94	94	94
• 25%	92	92	93	93	93	93	93	93	93
Efficiency output in SmartActive mode	Up to 98.5%								
Overload	110% – 60 min, 125% – 10 min, 150% – 1 min								
INSTALLATION DETAILS									
Weight, kg	730	785	865	1,000	1,100	1,550	1,700	2,525	2,700
Dimension (HxWxD), mm	1,905x800x850		1,905x1,000x850			1,905x1,500x1,000		1,905x2,100x1,000	
Distance from UPS to ceiling	Not less than 60 cm								
Heat release (at pf=0.9), kW	6.8	8.3	10.8	13.5	16.9	20.3	27.1	30.3	36.3
Cables connection	Below at the front								
Max. section of connected cables (input, output)*, mm²	50	70	95	2x50	2x70	2x120	2x150	3x120	3x150
Max. section of connected cables of external batteries, mm²**	95	2x50	2x70	2x70	2x120	3x95	3x120	4x120	4x150
Air flow rate, m³/h	2,225		4,625			8,100		13,000	
Remote signals	Dry contacts (configurable)								
Remote control	Emergency shut-down (ESD) and bypass								
Communication	Two RS-232 + remote contacts + 2 slots for communication interface								
Operating temperature	0°C to +40°C								
Relative humidity	<95%, without condensate								
Color	RAL 7016								
Noise level at 1m	63 to 68 dBA					70 to 72 dBA			
Degree of protection	IP20 — standard (other IP degree — on request)								
References	Safety — GOST R; EN 62040-1-1 (Directive 2006/95/EC); Electromagnetic Compatibility — EN 62040-2 (Directive 2004/108/EC)								
Classification as per IEC 62040-3	(Voltage Frequency Independent) VFI-SS-111								

** Sections are given for each phase, neutral and PE
** Values are given for each pole of a battery (+/–)

Monitor Software

RUPS2000

RUPS 2000 is a UPS monitoring and controlling software that continuously checks the status of system AC power and UPS battery condition both of local and network UPS. Conbined with ClientMate, RUPS 2000 could be as a server software, and let the Clientmate get UPS status from RUPS 2000. In the event of any abnormal condition, RUPS 2000 will send out warning message to inform user and even shut down the system after a pre-setting delay time after power failure. In using RUPS 2000, there will be no distance problem and makes work efficient. When any power event occurred, RUPS 2000 will do automatic files saving, system shut down, and also send email, pager notification. User will no longer have problems with the system and date on system power failure.

Furthermore, RUPS 2000 supports Windows NT Service function, RUPS 2000 will be enable when Windows NT boot up even if there is no users login the server. Design for contact closure interface UPS, monitoring power failure and low battery OS support: Novell Netware, DOS, WINDOWS 3.x/9x/NT

UPSilon 2000

UPSilon 2000 is a monitoring and controlling software for RS-232 Smart UPS. When the power is normal, UPSilon 2000 will display real UPS status in analog diagram display. It can also monitor remote UPS with the use of the intranet/internet. Conbined with ClientMate, UPSilon 2000 could be a server software, and let ClientMate get UPS status from UPSilon 2000, therefore, there will be no distance-problem and makes work efficient. When any power event occurred, UPSilon 2000 can do automatic files saving, systems shutdown, and also send email, pager notification. User will no longer have problems with the system and data on system power failure.

Furthermore, UPSilon 2000 has also the Windows Service Function, UPSilon 2000 will be enable when Windows NT boot up even if no users login the server. ClientMate supports RUPS 2000, UPSilon 2000 and SNMP Agent, as a workstation software it is able to auto detect host in network, and monitor main UPS status. In the floating status/alert display, user could real-time monitor server UPS, in case of any power event, ClientMate will auto save files and safely shutdown operating system. In the internet world, it is more necessary to have 24-hours system protection, data and nessage receiving. The strong features of UPSilon 2000 and ClientMate will become the best solution for your UPS OS support: Novell Netware 3X, 4X, 5X, WINDOWS 9x/NT/2000/Vista

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